Indiana Department of Natural Resources - Division of Forestry

DRAFT
RESOURCE MANAGEMENT GUIDE

State Forest: **Yellowwood** Compartment: **14** Tract: **03**
Tract Acreage: **105** Commercial Forest Acreage: **105**
Forester: **Kaylee DeCosta** (for Dave Vadas) Date: **2/16/2011**

Location
This tract is located in Section 1 of Brown County of Township 10N, Range 1E. It is approximately 6 miles southeast of Martinsville, 2 miles northwest of Waycross, and approximately 4.5 miles northwest of Trevlac. Access is through a gated firetrail off of Bear Creek Road at Bear Wallow.

General Description
This tract is 105 acres in size all of which are commercial acres. The forest resource is predominantly medium to large sawtimber Mixed Oak with Mixed Hardwoods present in some of the cove areas and on north or east facing slopes. Also present in this tract are areas of high quality Black and White Oak approaching maturity. The tract inventory species composition is listed below in Table 1 according to their dominance:

Table 1. Overview of Forest Resources

Sawtimber	Poletimber	Regeneration
Chestnut Oak	Sugar Maple	American Beech
White Oak	Red Maple	Sugar Maple
Sugar Maple	Chestnut Oak	Red Maple
Northern Red Oak	American Beech	Yellow Poplar
Black Oak	Yellow Poplar	Sassafras
Scarlet Oak	Sassafras	Ironwood
Yellow Poplar	White Oak	Blackgum
Red Maple	Blackgum	Flowering Dogwood
American Beech	White Ash	Pignut Hickory
Pignut Hickory	Basswood	White Ash
White Ash	Shagbark Hickory	Blue Beech
Shagbark Hickory	Black Oak	Red Elm
Blackgum	Pignut Hickory	
Sassafras		
Red Elm		
Black Cherry		
Bitternut Hickory		
Basswood		
American Elm		

History
A timber sale of 103,940 BF on 10/30/1967 was sold to Charles Steele for $3,000. Forester Unversaw completed the first tract inventory on 2/20/1986. This inventory noted 5,362 BF/A of present volume with an estimated 2,778 BF/A of harvest. In June of 1988 a large portion of forest was acquired from George Brunner and this acquisition enlarged the southern portion of the tract acreage. Y1403's tract boundary was changed to refine the boundaries of tracts 2, 3, & 5 and the current tract now includes some of the Brunner Acquisition. YSF staff completed vine control in this tract on 4/10/1989. Forester Unversaw completed a harvest marking on 4/12/1989. Road improvements were completed to the haul and skid trails on 8/8/1989. A timber sale of 95,869 BF on 9/20/1989 was sold to Imperial Lumber Kilns along with Tract 1 for $40,516. The timber harvest was completed on 10/16/1989. This tract was hit by a wind storm on 5/16/1990. The damaged timber from this storm was cut for firewood instead of marked for harvest. It is believed that some of the eight lower group selection openings in the tract were created following this 1990 wind storm and firewood cutting operation. A postharvest stump audit was conducted on 10/31/89 resulting in 145 marked stumps with no unmarked stumps found however 5,000 BF of marked timber were not harvested. The tract was opened for public firewood cutting on 6/12/1990. 100 European Black Alder and 50 Autumn Olive were planted around the log yards on 3/14/1991. Haul roads and log yards were disked and seeded in April 1991. The tract's boundary changed again in winter 1996 and acreage was added from old tract 2 on the west end. The current tract inventory of 105 acres was completed on February 15, 2011 by Forest Intermittent K. Decosta.

Landscape Context
The majority of land surrounding the tract is managed State Forest with some privately managed forestlands to the north and east. Two large ponds and a cropland field area also lie to the immediate area north of the tract on private property. This tract is located within the Brunner Tract Forest & Wildlife Management Unit of Yellowwood State Forest. The Brunner Tract had a long history of upland row crops prior to the State Acquisition in 1988. This Management Unit was established to continue the great diversity of forestland and early successional wildlife habitats by periodic timber harvests as well as maintained grassland fields. Some of the wildlife fields within this Unit were planted shortly after acquisition to warm season grasses that are given prescribed burns on a regular basis. The remainder of the Brunner Tract wildlife fields is mowed every 4-5 years to prevent or reduce woody plant encroachment. At times these fields are treated by prescribed burns to reduce fescue and thatch. This mixture of grassland field edges with early successional forest habitats is unique on the Yellowwood State Forest and provides many opportunities for wildlife viewing as well as hunting for the public.

Topography, Geology and Hydrology
This tract is comprised of 1 main ridge with several finger ridges dispersing throughout. Topography ranges from 6% to 70% slopes with all aspects being equally represented within the tract. The underlying soils range from 27 - 70 inches in depth to weathered siltstone interbedded w/sandstone and/or shale bedrock. One mapped intermittent stream serves as the tract's west and north boundary; another mapped intermittent stream serves as part of the tract's southern boundary. Several other unmapped ephemeral drainages occur throughout the tract. The water resources from this tract drain into Indian Creek and from there into the White River.

Soils
Be (Beanblossom channery silt loam, occasionally flooded) This soil type is deep and moderately well drained, gently sloping, or nearly level. It is subject to occasional flooding and so presents equipment limitations. This soil type comprises approximately 5% of the tract.

BgF (Berks-Trevlac-Wellston complex, 20 – 70% slopes) Moderately steep to very steep slopes and well drained soils. This tract is comprised of approximately 70% of this soil type and presents moderate - severe erosion hazards, severe equipment limitations, slight -moderate seedling mortality, and slight windthrow hazard. Management considerations should include building haul roads on a contour and constructing water bars to prevent erosion.

WeC2 (Wellston-Gilpin silt loams, 6 – 20% slopes, eroded) Moderately sloping to moderately drained soils on sideslopes and ridgetops. This soil type comprises approximately 15% of the tract and presents slight risks for erosion hazard, equipment limitation, seedling mortality, and windthrow hazard.

HkF (Hickory silt loam, 20-70% slopes) Moderately steep to very steep, deep, well drained soil with a high available water capacity and moderate permeability. This soil type comprises approximately 10% of the tract and presents severe erosion hazards and equipment limitations. Seedling mortality and windthrow hazard is low. Haul roads/skid trails should be built on a contour, water bars constructed, and understory vegetation should be preserved where possible to reduce erosion hazards.

Access
Access to this tract is through a gated firetrail off of Bear Creek Road at Bear Wallow. This roadway underwent road improvements during recent timber harvests into 3 other tracts that are north and west of this tract. An old haul road, skid trails, and log yards are present within the tract but would need clearing before reuse. The haul road into this tract will cross through Fields 8, E and 9 of the Brunner Tract Forest & Wildlife Management Unit.

Boundary
This tract is bordered by Yellowwood State Forest to the west and south. Private property borders the tract on the northern and eastern portions. This boundary is marked in orange paint along the tract's north & east lines and currently up to date. The south line portion of the private property in the E1/2 of the NE1/4 of S1 currently needs to be reevaluated as the current ground evidence at the SW corner does not fit the topographical evidence. This boundary is scheduled to be reviewed and remarked in 2011.

Wildlife
This inventory was conducted in winter during snow cover so no migrant breeding birds were detected. Other birds seen or heard during the inventory include White-breasted Nuthatch, Carolina Chickadee, Tufted Titmouse, Red-bellied Woodpecker, Pileated Woodpecker, Golden-crowned Kinglet, Hairy Woodpecker, Eastern Bluebird, American Crow, Downy Woodpecker, Red-headed Woodpecker, Blue Jay, Carolina Wren, Northern Flicker, American Robin, Eastern Towhee, Red-tailed Hawk, and American Goldfinch. Several Sandhill Cranes were seen flying over this tract in migration. Canada Geese were also heard from the water sources to the north.

Other wildlife species detected during the inventory include White-tailed Deer, Wild Turkey, Opossum, Raccoon, Eastern Chipmunk, and Gray Squirrel. A few Beech cull trees were noted as Raccoon dens; these trees should be retained and protected during harvesting operations. A Natural Heritage Database review was completed for the tract; no rare, threatened or endangered species records were identified within the tract. Nearby records of ETR species include Timber Rattlesnakes and Kirtland's Snake. Timber Rattlesnakes are benefitted by the woody debris left from timber harvests as it provides cover for them and habitat for their prey such as small mammals. Kirtland's snakes prefer habitats characterized by open areas near a water source such as moist fields. The habitat maintained within the Brunner Tract Wildlife Management Unit is suitable and helpful to Kirtland's snake populations. Deficiencies were found in the wildlife habitat feature summary for timber snags in the 5"+DBH, 9"+DBH, and 19"+DBH categories as highlighted in red below. An increase in snag density is expected to occur in the next few years due to expected natural mortality from the sustained drought that occurred in the area in the Summer/Fall of 2010. Post harvest TSI following timber harvests is also a management technique that can aid in increasing tract snag densities. This would include the girdling of cull trees or unharvested timber in planned group selection openings.

	Maintenance Level	Optimal Level	Inventory	Available Above Maintenance	Available Above Optimal
Legacy Trees *					
11"+ DBH	954		2825	1871	
20"+ DBH	318		681	363	
Snags (all species)					
5"+ DBH	424	742	404	-20	-338
9"+ DBH	318	636	291	-27	-345
19"+ DBH	53	106	44	-9	-62

*** Species Include:** AME, BIH, BLL, COT, GRA, REO, POO, REE, SHH, ZSH, SIM, SUM, WHA, WHO

Communities

The current tract inventory was conducted during winter, therefore many understory plant species that have been present during the summer were undetectable. The Natural Heritage Database review did not record any rare, threatened or endangered plant & animal species within the tract. One record to the south indicated Illinois Blackberry in 1922; however, it is not likely that this plant persists today. Autumn Olive and European Black Alder were planted around the log yards in 1991 for wildlife habitat enhancement. Autumn Olive is still present but is now listed as an invasive plant. Japanese Stiltgrass was also noted along the old haul road. These invasives are planned to be treated during this management cycle.

Recreation

This tract is modestly accessible to the public. A public parking lot lies adjacent to the cable gated firetrail along Bear Creek Road which is the only access into the north area of the Brunner Tract Forest and Wildlife Management Unit. This tract lies approximately one half mile inside the gated firetrail. Common recreational activities that the tract would provide are hunting, mushrooming, hiking, and wildlife viewing.

Cultural

No cultural sites were observed during the inventory. In the event a cultural resource is discovered its location will be documented & submitted to the Division's archaeologist. All cultural sites will be buffered from harvest operations.

Tract Subdivision Description and Silvicultural Prescription

Tract Summary Data

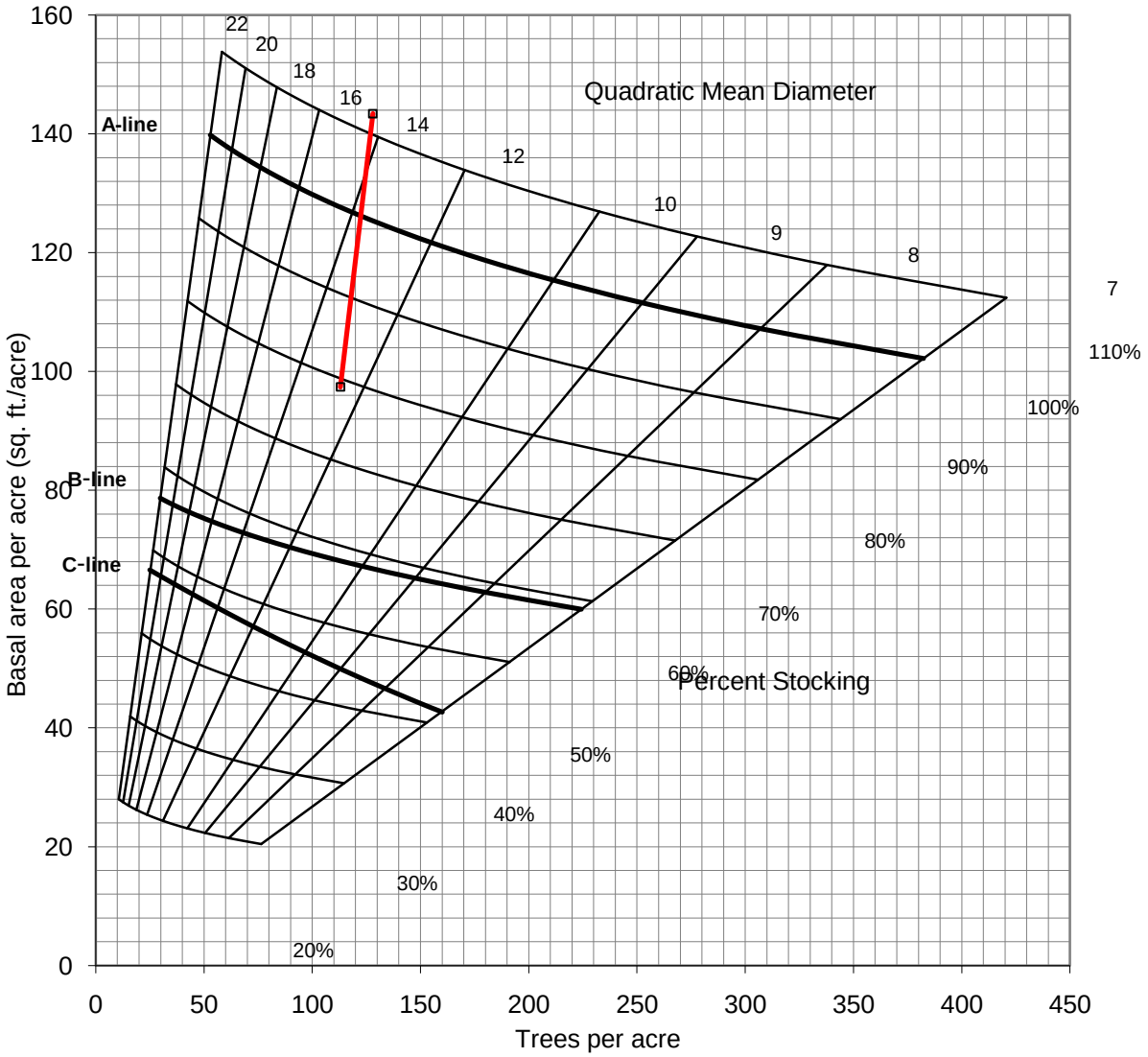
Total Trees/Ac.= 395 Overall % Stocking = 132% (Over-stocked)

Sawtimber & Quality Trees/Ac.= 66 BA/A= 143.4 sq. ft./Ac.

Present Volume = 10,344 Bd. Ft./Ac.

Harvest Volume = 3,318 Bd. Ft./Ac.

Growing Stock Volume = 7,026 Bd. Ft./Ac.



Silvicultural Prescription

This inventory was completed on February 15, 2011: 35 prism points were evaluated over 106 acres (1 point for every 3.0 acres). Inventory results are given above. This tract is presently overstocked and a timber harvest is prescribed. A timber harvest will focus on removal of dying, mature, deformed, or poor quality stems of low vigor in an effort to release more vigorous crop trees and improve spacing. Numerous quality White and Black Oak approaching maturity are present in the tract and should be released where possible. Basal area is high in portions of the tract causing crown competition of croptrees from intermediate and overtopped trees. Thinning from below is recommended to reduce crown competition and increase growth on selected croptrees. Other areas throughout the tract warrant regeneration through group selection. This tract is located within the northern portion of the Brunner Tract Forest & Wildlife Management Unit. This Management Unit is a unique area on the Y-MMSF Property where the development and maintenance of early successional wildlife habitat has been encouraged since 1988. Tracts within this Unit are managed to encourage early successional yet ephemeral forest regeneration openings as well as the maintenance of preexisting wildlife grassland fields. As this tract borders 2 tracts with permanent wildlife grassland fields, additional forest regeneration openings of an ephemeral nature ranging from 1 to 10 acres will be evaluated during the proposed harvest marking providing the timber types and forest stocking warrant this prescription. Overall, some areas were noted during the inventory as having overall poor quality, poor species composition, and mortality due to insect damage or disease; other areas also have groups of over-mature trees (Yellow Poplar in particular). In stands where intermediate silvicultural treatments are needed, the growth of more vigorous, longer-lived mast-producing species such as oaks & hickories will be encouraged. White Ash should be harvested where feasible in a sanitation cutting to reduce habitat for Emerald Ash Borer which is present in northern Brown County. Some Sugar Maple borer damage is also present; infected trees should be removed to reduce infestation levels and prevent additional attacks to healthier maples. Post harvest TSI is planned in the nine 1989-91 regeneration openings to perform croptree release and control grapevine populations. Some Yellow Poplar poles in these openings are displaying signs of drought stress and will likely grow as cull trees if not removed. Several cull trees with cavities were observed in this tract; some of these could be girdled or deadened to increase snag density and improve Indiana Bat habitat or they can be retained if they appear to be occupied by wildlife.

Overall the cutting cycle for this tract is suitable for 20 years. Based upon the inventory data a timber sale is proposed for this tract for late FY2011-12 or FY2012-13 and a modest harvest marking of over 250,000 BF is expected.

Volume Estimates: Yellowwood SF Comp. 14 Tract 03

Data from February 15, 2011 Inventory

Species	Harvest	Growing Stock	Total Volume
Chestnut Oak	119,590	210,590	330,180
White Oak	27,930	179,060	206,990
Yellow Poplar	60,400	81,420	141,460
Northern Red Oak	21,870	97,950	119,830
Black Oak	38,460	47,880	86,340
Scarlet Oak	16,920	34,490	51,410
Sugar Maple	13,100	30,240	43,340
Red Maple	11,170	18,330	29,490
White Ash	27,940	0	27,940
Pignut Hickory	0	21,340	21,340
American Beech	5,990	5,640	11,630
American Elm	0	4,930	4,930
Basswood	4,250	0	4,250
Blackgum	0	3,850	3,850
Shagbark Hickory	0	3,540	3,540
Bitternut Hickory	0	3,300	3,300
Black Cherry	2,590	0	2,590
Red Elm	0	2,220	2,220
Sassafras	1,870	0	1,870
Tract Totals (Bd. Ft./Ac.)	**351,710**	**744,790**	**1,096,500**
Per Acre Totals (Bd. Ft./Ac.)	**3,320**	**7,030**	**10,340**

Proposed Activities Listing

Proposed Management Activity	*Proposed Period*
DHPA Access project	FY 2011-12
Property line remarking	FY 2011-12
Invasives Treatment	FY 2011-12
Timber Sale Roadwork Improvement	CY 2012-13
Timber Marking	CY 2012-13
Timber Sale	FY 2011-12 or FY2012-13
Post Harvest TSI and Invasives ReTreatment (if needed)	CY 2012-14
ReInventory and Management Guide	2031

Attachments

Included in Tract File:

- Topo Map of Tract Features
- Tract Soils Map
- INHD Review Map
- Stocking Guide Chart
- Ecological Resource Review
- TCruise Reports

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You **must** indicate the State Forest Name, Compartment Number and Tract Number in the "Subject or file reference" line to ensure that your comment receives appropriate consideration. Comments received within 30 days of posting will be considered.